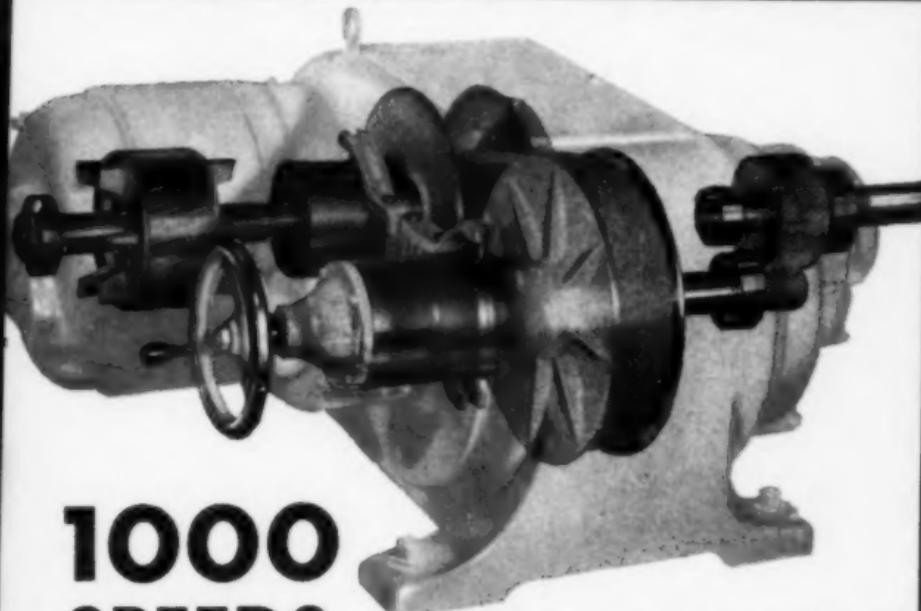


Hitchcock's
**Machine Tool
Blue Book**

OCTOBER, 1934

TWENTY-NINTH YEAR



**1000
SPEEDS** —at the turn of a wheel
U. S. VARIDRIVE MOTOR with
Syncogear

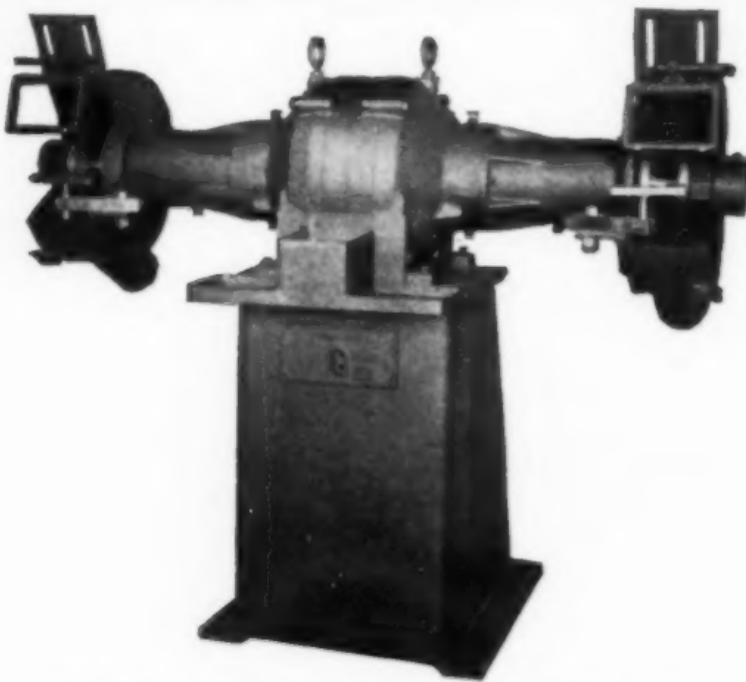
The new U. S. Varidrive motor offers any and all speeds over a wide range. It combines in an integral compact unit the simplest mechanism for replacing and performing the functions of an electric motor, intermediate couplings and transmissions, variable speed device and geared speed reducer.

MICRO-SPEED CONTROL—1 r. p. m. to 10,000 r. p. m.

Send for new descriptive bulletin.

U. S. ELECTRICAL MFG. CO., 1522 So. Western Ave., Chicago, Ill.

PUBLISHED AT 508 So. DEARBORN ST. CHICAGO



7½ H. P.—4 Bearing Grinder, for 18"x2" Wheels.

Grinders and Buffers

We offer the most complete listing of bench and pedestal designs from $\frac{1}{2}$ to 20 H. P. now available, allowing selection of design best suited to your operating requirements.

Outline your specifications and write for recommendations.

Details Submitted Promptly

THE PRODUCTION EQUIPMENT CO.
5213 Chester Ave., CLEVELAND, OHIO

A LITTLE
HANDFUL of POWER
—This $\frac{1}{4}$ " Light Duty Skilsaw Drill!



Has features of construction, power, accuracy and smoothness you ordinarily would expect in much heavier drills—yet is priced so low it's truly amazing. Heavy power motor. Die cast Alloy Body. Motor has high grade Ball and Amplex bearings; spindle has Needle Roller and Ball Thrust Bearings. Weighs only $4\frac{1}{4}$ lbs. and is beautifully balanced. *See it drill*—ask your distributor or write for our catalog!

SKILSAW INC., 3304 Elston Ave., CHICAGO

SKILSAW DRILLS

MADE IN EIGHT POWERFUL MODELS

ACCURATE

because

Precision -built to close limits

You'll say when you see a Buffalo 15-inch Production Drill that it's too high-priced for our trade—but you'll be wrong! This husky, well-designed drill—new from spindle to base—sells at a price which competes with many inferior tools now on the market.

It's accurate to an extreme—with a long-life, built-in accuracy—it's rigid because of the extra heavy construction. Head equipped with double row ball bearings at top of spindle as well as two additional sets, thus assuring extreme accuracy, rigidity and smoothness of operation. Runs smoothly at speeds to 10,000 r.p.m.



Floor and Bench Types—

described in bulletin 2951. Write for this and prices now if you are interested in real VALUE.

Buffalo Forge Company
161 Mortimer Street, Buffalo, N. Y.

In Canada: Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

"Buffalo" **15-Inch**
Heavy-Duty
Production Drills

Hitchcock's
**Machine Tool
Blue Book**

**Selected
Circulation**

**20,000
Monthly**

OCTOBER, 1934

TWENTY-NINTH YEAR

How's Business?

If there is not the desired pick-up in business, the fear of what may happen in the future is one of the greatest deterrent causes.

But if we look squarely at some of the significant trends of the past year, we might take a more encouraging view of what the future has in store.

According to "Business Week", labor's pay is somewhat better than last year; farm income is 20% greater—allowing 10% increase in the cost of things the farmer buys; retailers' shelves are bare; the Treasury policy looks orthodox; the banks can take care of any imaginable expansion, and the fundamental forces working for recovery still persist.

There can be no doubt that business will be much better this fall and winter if we can throw off our paralyzing pessimism, and not cross the bridge of what is going to happen until we get to it. During the last year the Administration has moved distinctly toward the right, and it has been more conservative than it talks.



Published By

**Hitchcock Publishing Co.
508 S. Dearborn St., Chicago, Ill.**

Consult the Classified Finding Index for your requirements

SUNDSTRAND

3-Wheel Tool Grinder

A big, powerful, convenient machine for grinding and honing accurate, smooth, keen edges on cutting tools. Made in three types (a) for tungsten carbides (b) for high speed steels, (c) for tungsten carbides and steels. Speeds up tool-sharpening, improves cutting, lengthens tool life.



BENCH CENTERS



BALANCING TOOLS

Made in 5 sizes, with capacities from 800 lbs. to 24,000 lbs. Others for propellers, flywheels, pulleys, etc.

Accurate, compact, portable. Adjustable heads. Quick-acting spindle. Seven sizes.



These Sundstrand tools, like our Lathes and Milling Machines, cut costs and make work easier. • • •
INVESTIGATE! Address our Dept. H for details.

FOOTBURT



A Single Spindle Footbur Sipp Sensitive Drill

Made in three
sizes of single
and multiple
spindle models

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

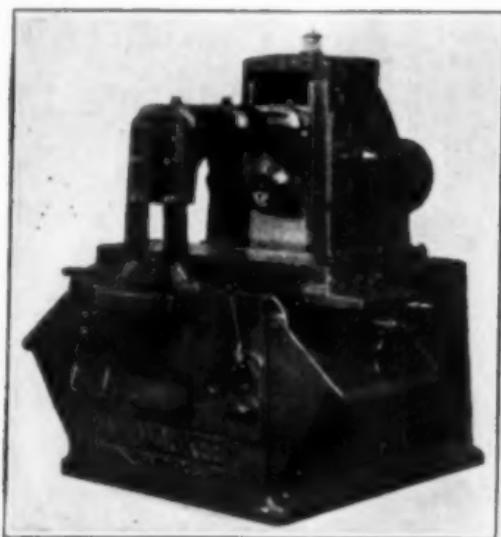
Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

New Automatic Milwaukee

Milwaukee Simplex and Duplex bed type milling machines, first introduced by Kearney & Trecker Corporation in 1930, are now provided with complete "two-way" automatic control. With this new feature, the table can be operated automatically or manually, or with a combination of both—whichever control is most convenient for the immediate job.



To obtain complete automatic control, a small, compact hydraulic operator, or control unit, has been designed and is incorporated in the saddle of the machine. This unit affords complete automatic control in a great variety of milling cycles, both one and two-way, with or without automatic spindle stop, depending on requirements.

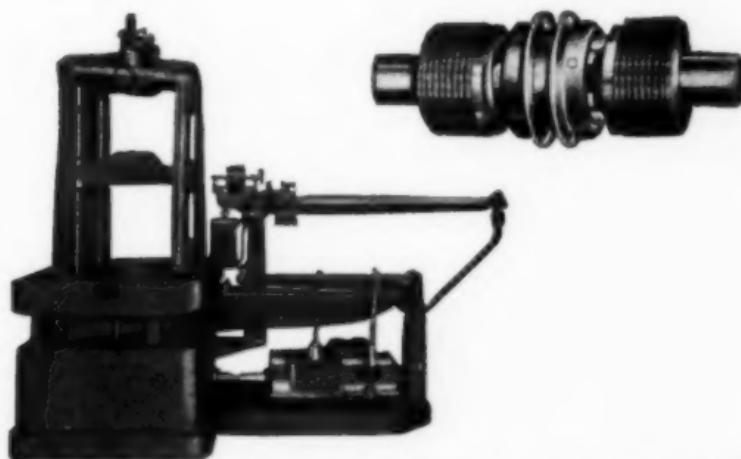
The two plungers at the left and right of the tripping post control the operation of the unit for automatic reversal of the table and rapid return. At the selected point for automatic reversal, a dog depresses the plunger, slightly opening a valve which causes the plunger to jump ahead under hydraulic pressure. The entire operation of reversal is then made hydraulically, at a fast, constant rate, controlling the point of reversal to a fine degree of accuracy, regardless of load.

(Continued on Page 10)

Riehle Bros. say
"PULLMORE CLUTCHES
entirely satisfactory"

Referring to Pullmore Clutches, Riehle Bros. Testing Machine Co., Philadelphia, writes "...will be worked in wherever possible, since it has proved entirely satisfactory in the gear box." Pullmore Clutches are highly efficient, reliable, durable; and easily adjusted. That is why they are entirely satisfactory in Riehle Testing Machines, and in a wide variety of other high grade machinery.

Pullmore Clutches are available in the double type shown below; and single type; for operation dry or in oil. Capacities range from 2 H. P. to 60 H. P. at 500 r. p. m.



Write today for our catalog which contains valuable information on Fullmore Industrial Clutches and their installation.

**ROCKFORD DRILLING MACHINE CO.,
410 Catherine St.,**
ROCKFORD, ILLINOIS

Sold by MORSE CHAIN CO., Ithaca, N. Y.
With offices in principal cities.

(Continued from Page 8)

In previous practice, the clutch was withdrawn mechanically at the feed rate speed. This slow withdrawal of the clutch subjected it to severe strain, and thus greatly limited the accuracy of the point of reversal.

The automatic reverse is always followed by an instantaneous shift to rapid traverse. A simple interlock provides that the reverse clutch must be completely engaged before the engagement of rapid traverse, resulting in smooth, quiet operation and avoiding clashing of clutches at rapid traverse speed.

The table dogs and tripping mechanism are fully enclosed in a compartment provided in the front of the table. A sliding cover makes the dogs readily accessible and yet eliminates all dirt, chips, and coolant.

The new automatic system provides complete dog-controlled table movement of any milling cycle desired, with automatic stop. Rapid traverse, feed and direction are controlled by a single lever.

There are three feed changes, from $1\frac{1}{2}$ to 20, 1 to 40 and $2\frac{1}{2}$ to 100 inches per minute, with 18 changes in each range. The four speed ranges are 20 to 135, 40 to 270, 75 to 500 and 150 to 1,000 r. p. m., with 10 speed changes in each range.

Simplified Practice on Milling Cutters

Simplified practice recommendation R36-34, milling cutters, is now available in printed form, and copies can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for \$0.05 each, according to the division of simplified practice, of the National Bureau of Standards.

This recommendation, which was first promulgated in 1925, is concerned with diameters, thicknesses, and other important dimensions of various types of milling cutters, such as plain milling, involute gear, screw slotting, keyseat, end mills for various purposes, and slitting saws, used on machine tools.

This revision represents a substantial decrease in the number of stock sizes and varieties of milling cutters shown in the original recommendation.

KRW Hydraulic and Sensitive ARBOR PRESSES

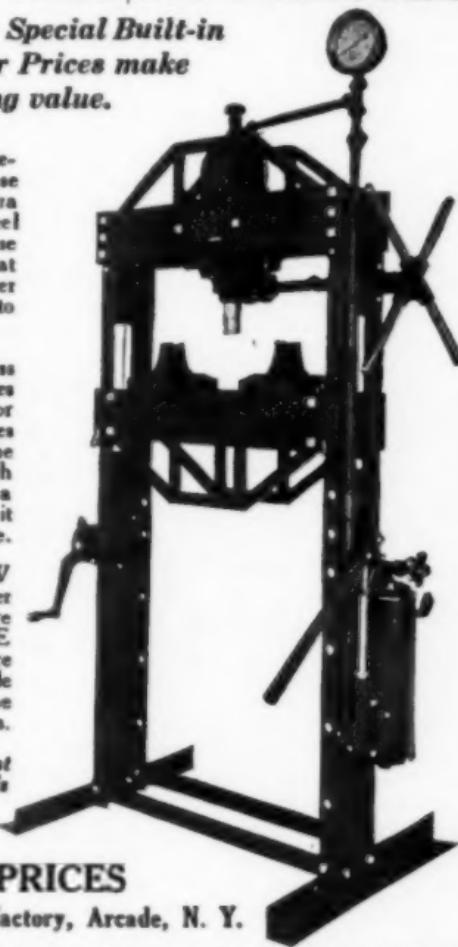
New Improvements, Special Built-in Features and Lower Prices make them an outstanding value.

THE last word in convenience, efficiency and ease of operation. Built extra strong and well braced, with steel trusses electrically welded, these presses will withstand strains that would cause presses of lighter and inferior construction to buckle or collapse.

Hand wheel for sensitive press operations has sliding handles which pull out to the ends for increased leverage. Work does not have to be changed from the work table as is the case with other make presses having a separate sensitive press unit mounted on the side or elsewhere.

The importance of this KRW feature as a time and labor saver can be appreciated. Also there is NO EXTRA CHARGE for this important built-in feature on a KRW Press. Work table can be raised easily with one hand. A strictly one-man Press.

Write for special circular, just off the press, giving full details and specifications of all KRW Arbor Presses.



PRICES

F. O. B. Factory, Arcade, N. Y.

No. 37—35 ton Hydraulic and Sensitive Arbor Press (hand operated)	\$128.00
No. 37B—35 ton Hydraulic and Sensitive Arbor Press (air-oil operated)	128.00
No. 37E—50 ton Hydraulic and Sensitive Arbor Press (hand operated)	150.00
(Can also be furnished in air-oil operated at same price)	

No. 37F—70 ton Hydraulic and Sensitive Arbor Press (hand oper. only) 275.00

Gauge and fittings, \$15.00 extra on all presses.

K. R. WILSON

10-16 Lock Street, Buffalo, N. Y., U.S.A.

EXPORT DEPARTMENT

90 West St., New York, N. Y.

WEST COAST BRANCH

722 Mateo St., Los Angeles

A New Haskins Tapping Machine



Three years ago the R. G. Haskins Co., 4636 Fulton Street, Chicago, announced a new tapping device which they say has revolutionized the tapping of small holes. This has led to the development of a second high-speed tapping equipment, here illustrated, in which a number of further improvements are incorporated.

The range of the Haskins No. 2 tapper overlaps that of the No. 1—from No. 10 taps up to and including $5/16''$ in steel, $3/8''$ in cast iron and $7/16''$ in brass and other non-ferrous metals.

A powerful $\frac{1}{2}$ H. P. motor operating at 3450 R. P. M., supplies ample power to drive the largest tap within

the range of the machine without overloading. Two change gears are furnished standard with each machine, giving speeds of 1100 and 1750 R. P. M. Reverse speed is double that of the tapping speed. Motors to operate on 50 or 60 cycle, single phase, as well as three phase and direct current, can be supplied.

The accurately ground and balanced tap spindle, complete with the double cone clutch, collet and cap, weighs only eighteen ounces. Due to the resulting lack of inertia, blind holes can be tapped without fear of breaking taps, even though the tap hits bottom. There is absolutely no float in the tap spindle, insuring the most accurately tapped holes. Reverse of the tap is automatic when the pressure on the foot pedal is released.

All Haskins tappers have a valuable feature which they claim is not to be found in any other tapper. The tap spindle is so designed that, by the removal of the collet chuck cap, a standard acorn die and holder can be installed, permitting external threading at the same high speeds as are used for tapping.

Production on this new machine is limited only by the ability of the operator to present the holes to the tap. In a large percentage of small tapped parts the most simple

(Continued on Page 14)



ATLAS DRILL PRESSES

\$13.95 to \$33.45

Small, medium and big—for bench or floor. Quality-built tools with more and bigger bearings at prices below what you've had to pay up to now. Special construction prevents side-play in quill.



**SAVE! Do your light lathe work on this 9"
ATLAS . . . \$79 Complete**

It's ready to run, this 9" Atlas Lathe. Self-contained countershaft, all belts *included* in the price. Set a motor on the bracket, plug into a light socket and it's ready to go. No outside shafting to place. No extras to buy.

A real lathe, running-tested to .001" accuracy before it's shipped. Six speeds with compound device that cuts out complicated back gears. Efficient V-belt drive. Automatic reversible feed; hollow headstock spindle; graduated compound rest. Cuts 4 to 72 threads.

18" bed (also larger sizes up to 36") of heavily ribbed cast iron machined and ground on precision equipment. *Immediate shipment* for 2 weeks' trial with guarantee of money back if not satisfied.

Write for Easy Terms and free illustrated catalog of the ATLAS FULLY EQUIPPED LATHE.

Real metal working Lathes as low as \$40. Write for information.

Atlas Press Company
1850 N. Pitcher St., Kalamazoo, Mich., U.S.A.



GEARS AND REDUCERS

LET US QUOTE YOU

Abant

Gear and Machine Co.
4832 W. 16th St., Cicero, Ill.

(Continued from Page 12)

and inexpensive fixtures can be used. The foot control leaves the operator's hands free to place the work. The operating speeds of this machine are so great and the tap goes in and out so quickly that very little effort is required to hold the part being tapped, resulting in the possibility of using light, inexpensive fixtures.

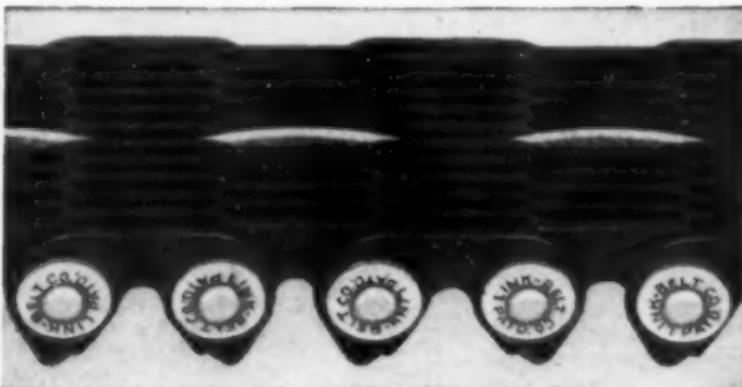
The R. G. Haskins Co. will furnish more complete information upon request.

Silverstreak Silent Chain Announced By Link-Belt

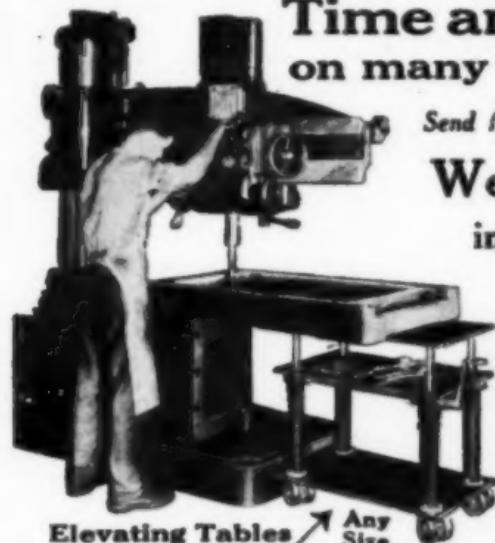
In keeping with today's trend toward greater thought to the aesthetic in designing even the commonest machinery part, Link-Belt Company, Indianapolis, announces that it has given a "new dress" to a 32-year old product, the Link-Belt Silent Chain Drive, by blueing most of the chain, and treating the washers and guide bars to give them a silvered appearance. The blueing of the bulk of the chain has the effect of placing the silvery parts on a dark blue background, thereby emphasizing the silvery parts.

The tradename Silverstreak has been adopted as a fitting designation, since when the drive is in operation the motion of the chain describes a silvery streak. Thus, the modernized chain has a distinctive appearance irrespective of whether it is in motion or lying in stock awaiting installation. It is made in all standard types, for both industrial first reduction drives and automotive silent timing; viz., Side Flanged, Middle Guide, No Back Bend, and Duplex types.

Silverstreak silent chain follows fairly closely on the heels of the announcement of Link-Belt Silverlink Roller Chain.



Hamilton Portables Save Time and Labor on many operations.



Elevating Tables / Any Size

Send for Illustrated Folder

We Specialize
in Dies, Jigs and
Machinery
Built to Order

We are always
at your service.

Write for Prices

The Hamilton Tool Co., Hamilton,
Ohio, U.S.A.

The BURKE No. 606 TAPPING MACHINE



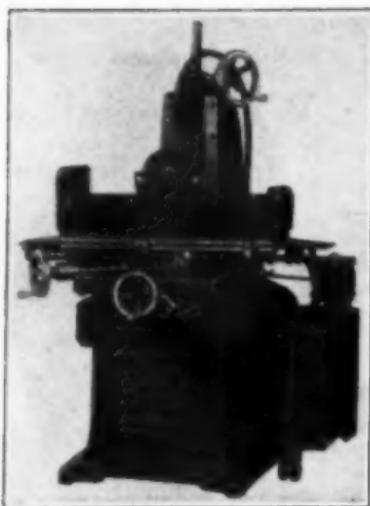
with exceptional power supplied by a $\frac{1}{2}$ H. P. motor, handles $\frac{5}{16}$ " taps in steel. It is compactly built and is completely equipped including chuck and switch.

Horizontal operation simplifies handling work on irregular shapes as both hands are free.

*Write for circulars
and prices.*

The Burke Machine Tool Co., 297 E. 16th St.,
Conneaut, Ohio

New G. & L. No. 25 Hydraulic Feed Surface Grinder



This new grinder is the product of the Gallmeyer & Livingston Co., Grand Rapids, Mich., who have been building precision surface grinders and hydraulic feed machines for many years.

The working surface of table is 6"x18" and the automatic longitudinal and transverse movements are sufficient to enable the operator to cover the entire working surface of table with $\frac{1}{2}$ " wide wheel, which is standard equipment.

The machine is built around a one-piece column and base casting, guaranteeing permanence of alignment between the cross saddle ways and the upright head ways. This casting alone weighs over 1000 lbs., and the proper distribution of this weight assures the rigidity so necessary to long life.

The hydraulic mechanism is mounted inside the base and driven by a 1 H.P., 1200 speed motor. Mechanism is conveniently accessible from either front or rear.

Practically any desired longitudinal table speed up to a maximum of over 50 feet per minute is instantly obtainable. Speed is controlled by lever conveniently located on the front of the saddle and may be varied at the will of the operator.

This machine is available with automatic cross feed or with hand cross feed, whichever lends itself best to customer's particular requirements.

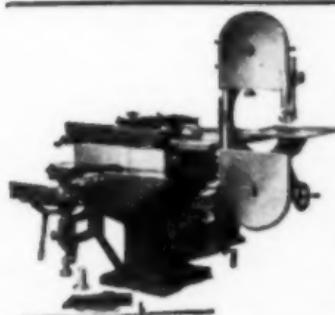
The manufacturers offer a choice of two types of motor drive. For 50 or 60 cycle current they can furnish the machine with a 1 H.P. dynamically balanced ball bearing motor mounted directly on the grinding wheel spindle. A 7" diameter grinding wheel is standard equipment with this construction.

(Continued on Page 17)

The second type of spindle drive consists of a 1 H. P., dynamically balanced motor mounted on an adjustable bracket attached to the spindle housing, with a tex-rope drive to the grinding wheel spindle. With this construction they furnish an 8" diameter grinding wheel.

The machine is also obtainable with the portable self-contained motor driven coolant system illustrated. The portable tank stands on the front, positioned against the base of the machine.

The manufacturers will furnish any of our readers with further information upon request.



TANNEWITZ Quality Woodworker

**4 Machines at the
price of ONE.**

A Band Saw, Saw Table, Jointer
and Mortiser, For Pattern Shop,
Shipping Room or Elsewhere—
Portable!

THE TANNEWITZ WORKS,
Grand Rapids, Mich.

Drill-Press Production at the Lowest Cost

Made In 6", 8"
and 14" Sizes



"JOHN'S" Universal Drill Jigs

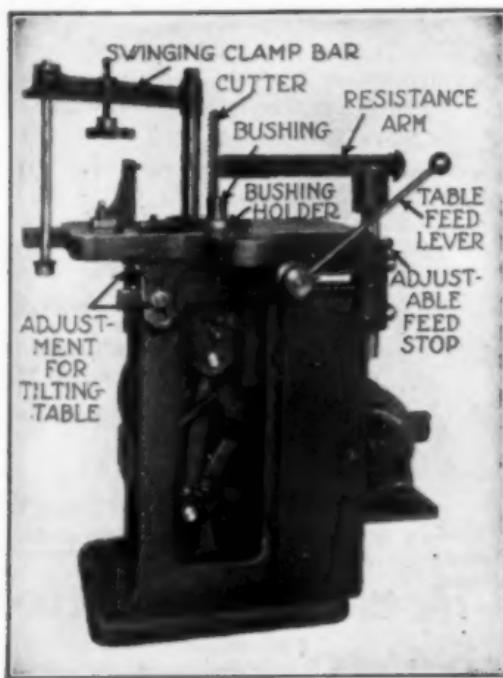
for
DRILLING
TAPPING
MILLING
REAMING
GRINDING
CENTERING, Etc.

Here is a production tool that will reduce your tooling costs. INTER-CHANGEABLE JAWS or STANDARD "V" JAWS keep the jigs in constant operation so they will handle practically any production job. Reduces loading time, maintains accuracy and gives plenty of chip room. Outlasts the average drill press.

Write for the Illustrated Folder

**HEUSER MFG. CO., 1638 No. Paulina St.,
CHICAGO, ILL.**

New Type Davis Keyseaters for Straight and Tapered Keyways



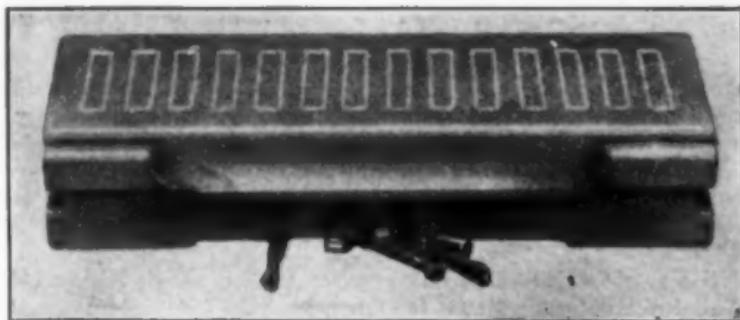
The method employed in Davis Keyseaters is that of a saw or broach, having several teeth cutting at one time. However, their older standard machines are so well known that we will mention here only some improvements that are embodied in the new machine:

I. Tilting table, which may be set in either direction from horizontal, and which is provided with scale and pointer to indicate taper per foot length of bore for which table is inclined.

II. Table feed by means of rack and pinion, with an adjustable collar on pinion shaft to indicate depth of cut, and an adjustable table stop by means of which duplicate cuts can be made without further attention by operator.

III. Vertical set-up of cutter, which remains vertical during all stages of the cutting operation.

(Continued on Page 20)



Rite Magnetic Chuck

Built in a modern plant by experts in this line—of the finest materials.
Workmanship and Quality guaranteed.

Made in the Following Sizes:

17x6x3 $\frac{1}{4}$ " high at \$75.00 14x6x4 $\frac{1}{4}$ " high at \$67.50
Operated on 110 Volts, D. C.

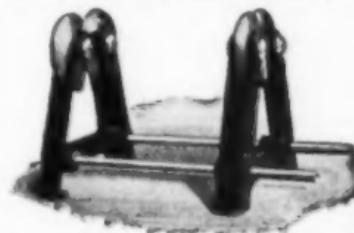
Adapted for every purpose for which a magnetic chuck can be used.
Manufactured by Rite Electric Manufacturing Co., New York

Sold exclusively through

Victor Machinery Exchange, *251 Centre Street,
New York City*

Anderson Ever Ready

Exceedingly Sensitive



Balancing Ways

Easy to Manipulate

Made in six sizes to balance anything that revolves from a crank shaft to a 24,000 lb. turbine rotar. They require no special leveling, no adjustment, and no centers.

Equipped with glass-hard spindles, chilled steel discs, and especially sensitive ball bearings, to give accurate, long time service.

"Swing"	20"	40"	60"	72"	96"	120"
Greatest distance bet. standards.....	20"	30"	30"	66"	88"	20"
Capacity in lbs.....	1000	2000	2000	5000	10000	24000
Approx. shipping weight.....	45	90	150	350	650	
Code	Lead	Bid	Bis	Bb	Bes	

Anderson Bros. Mfg. Co.
1915 Kishwaukee St., Rockford, Ill.

(Continued from Page 18)

IV. Improved clamping bar for holding down such work as needs to be clamped to table, although much work, such as small gears, etc., does not need to be clamped.

V. On belt driven machines a foot treadle belt shifter is provided as distinguished from hand shifter as used on the older type of machines.

For descriptive circular write to the Davis Keyseater Co., 403 Exchange St., Rochester, N. Y.

Spot and Butt Welding Equipment

Eisler Engineering Co., 759 South 13th Street, Newark, N. J., Catalogue 35W, entitled "Electric Spot and Butt Welding Machines", recently published, contains tables and information pertaining to spot and butt welding. Numerous illustrations, specifications and descriptions bring out the important features of the many types of spot and butt welders, as well as wire, portable and special welders, saw brazing machines, spot welding timers, and miscellaneous welding accessories. Copies will be furnished upon request.

Reed Knurl Line Enlarged

The Reed Small Tool Works, Worcester, Mass., has recently enlarged its line of standard stock knurls by nearly fifty percent. Their present line of stock knurls affords the trade a much wider selection of what the manufacturers claim is the finest quality that can be produced.

Reed Knurls are made under close supervision from alloy steel of the greatest obtainable toughness and hardness. The hole is lapped to size in order to give it the best bearing surface and closest fit on the pin. Every Knurl is given Rockwell hardness test and, like every other step in the manufacture of this product, these tests are held to close limits.

The knurling surface is highly finished after hardening, so that a like finish is produced on the work. This is a special feature found only in Reed Knurls. It is claimed that users find they last longest and produce the best work.

The manufacturers have issued a descriptive folder and price list, which illustrates approximately a hundred Reed Knurls. A copy will be mailed upon request.

THOMPSON
12"x36"
Universal



Saves
Time
and
Money

For All Kinds of GRINDING

Plain, edge, die, surface, cutter and reamer, and internal—and good at all of them. Efficient, accurate, dependable.

Work adjusts to a fixed grinding wheel, an exclusive feature that's better.

All standard machines equipped with auxiliary independent coarse cross feed for surface grinding.

**The Thompson
Grinder Co.**

1534 West Main St.,
Springfield, Ohio

Why Waste Time On Broken Taps?



Every minute spent by your high-priced mechanics in digging out broken taps is a dead loss. When a tap breaks it should be removed quickly with

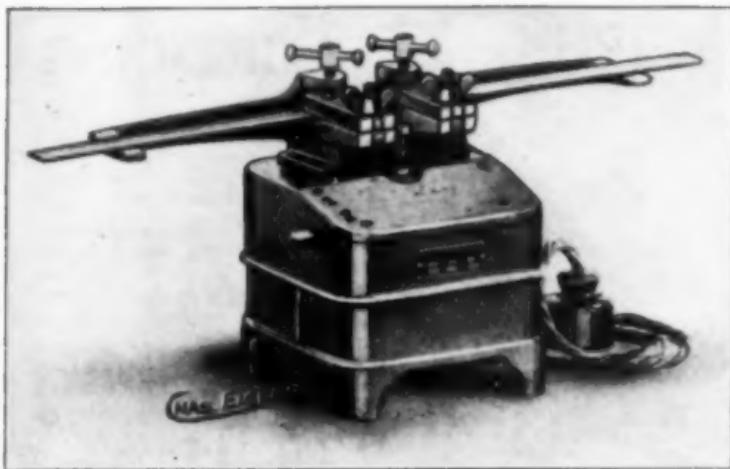
The Walton Tap Extractor

This handy tool has steel fingers which back out the tap *without injuring the threads*. It will save you many hours in the course of a year—paying for itself over and over again. Made in three and four-flute styles.

*Try One in YOUR SHOP—
Sent on 60-day Trial Basis*

The Walton Company
302 Pearl St., Hartford, Conn.

Eisler Saw Brazing Machine



The Eisler Engineering Company, of 759 So. 13th Street, Newark, N. J., manufacturers of electric spot and butt welders, are now marketing electric brazing machines for joining band saw blades or flat stock.

These machines operate on 110 or 220 volts A. C., and are made in four sizes for brazing widths of stock up to 3.35 inches.

The parts to be brazed are first pointed and beveled to a knife edge. They are then lapped along these edges and held in position by means of a special clamping arrangement provided on the machine. Upon operating a switch, conveniently located on the side of the machine, the current is turned on, heating both parts of the blade and a piece of spelter simultaneously. When sufficient heat has developed to melt the spelter, the current is turned off. The brazed section is compressed between the jaws of a special tool after which it is reheated for annealing. These compact brazing machines, one of which is shown in the illustration, require very little space and perform highly satisfactory work in rapid and economical manner.

HOW—can our advertisers know that your inquiry comes from Hitchcock's Machine Tool Blue Book unless you tell them? When writing them, won't you kindly say that you saw it in Hitchcock's? Thank you.

"ALNOR" Pyrometers

for the
Hardening
Furnace

TYPE NO. 1705

Inexpensive, yet accurate and durable, the ALNOR Pyrometer is used by large and small shops everywhere for heat-treating work. Because of its low price and compact size it is also very popular for soft metal melting, galvanizing, die casting, japanning, enameling, measuring flue gas temperatures and many other purposes.



Case diam.
4½ in.

Scale length
3½ in.

With 10 ft. Alloy Wire
connector block and a
No. 8 gauge insulated
thermo couple 24" long
without protection tube

Write for descriptive folder

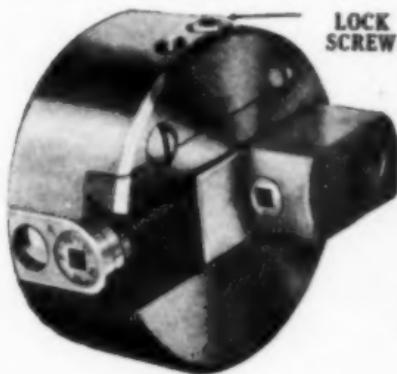
Illinois Testing Laboratories, Inc.

150 W. Austin Ave., Chicago, Ill.

See our Exhibit at National Metal Show, New York City, Oct. 1 to 5. Or
at International Foundrymen's Convention, Philadelphia, Oct. 22 to 26.

FLYNN MICROMETER OFFSET BORING HEADS

No. 30



This dovetail designed head is particularly useful where a large offset is required. Body is solid steel, dovetailed hardened tool holder has 2½" offset.

Tension gib and locking device takes strain off micrometer screw. Dial graduated in thousandths, 50 thousandths to a turn, insuring accurate adjustment in boring. Bar capacity is ¼-¾.

Write for folder giving complete information

FLYNN MANUFACTURING CO.

435 Bates St.,

Detroit, Mich.



GRANT

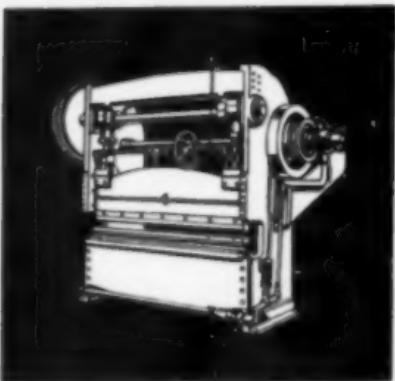
Riveters—Pioneers

in their line—Head rivets from smallest to $\frac{1}{8}$ " diameter either by NOISELESS SPINNING or VIBRATING HAMMER method—Sizes to meet all needs—Types include Vertical and Horizontal Multiple Spindles.

*Write for literature—and
don't forget to send
samples.*

The Grant Mfg. & Machine Co.
C. E. Station,
Bridgeport, Conn.

Chicago Steel Press Brakes



**Unbreakable Steel
Construction**

Sizes from 3 to 16 ft.
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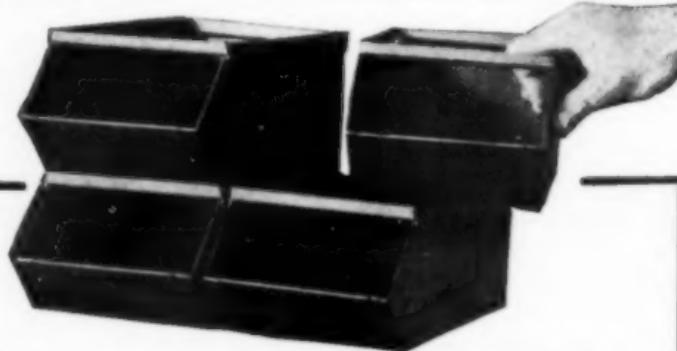


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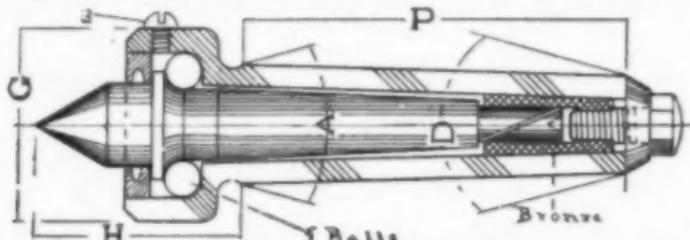
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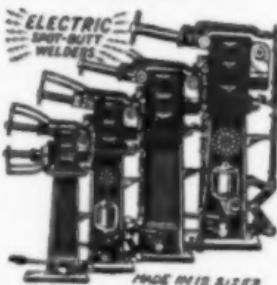
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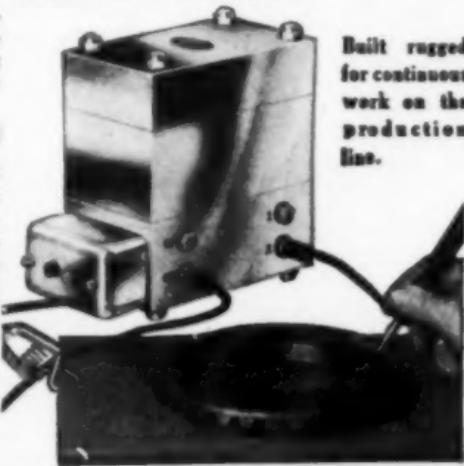
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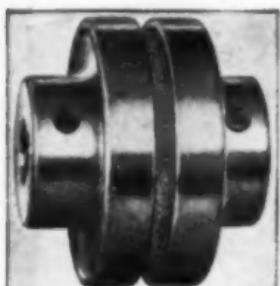
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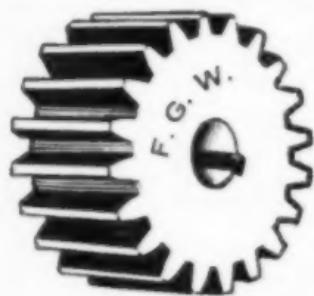
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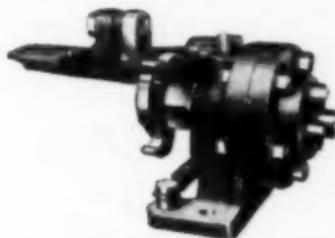
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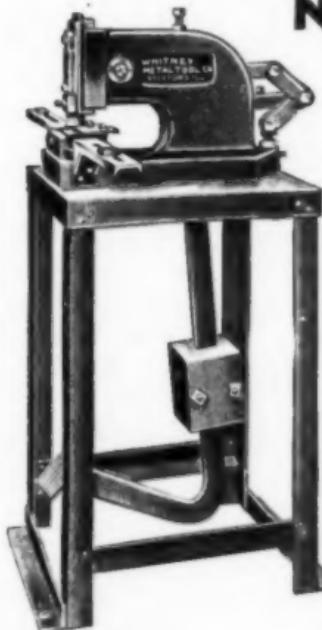
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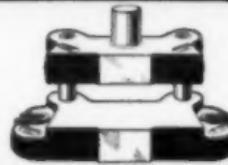
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Whitney Metal Tool Co., Rockford, Ill.

Punches and Dies
Lawthwaite Mch. Co., T. H., 811 E. 47th, N. Y.

Pyrometers
Illinois Testing Laboratories, Inc., 150 W. Austin Ave., Chicago

Pyrometers, Portable & Stationary
Illinois Testing Laboratories, Inc., 150 W. Austin Ave., Chicago, Ill.

Ratchets
Chicago Gear Works, 788 W. Jackson Blvd., Chicago, Ill.

Reamer Holders
W. H. Nicholson & Co., Wilkes-Barre, Pa.

Classified Finding Index

Riveters, Multiple Spindle

Grant Mfg. & Mch. Co., Bridgeport, Conn. Speed Reducers, Motorized

The Production Equpt. Co., Cleveland, O.

Riveters, Pneumatic

Grant Mfg. & Mch. Co., Bridgeport, Conn. Spot Welding Machines, Speed.

Eisler Engineering Co., Inc., Newark, N. J.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Sprockets

Boston Gear Wks. Inc., North Quincy, Mass.

Chicago Gear Works, 789 W. Jackson Blvd.,

Chicago, Ill.

Cullinan Wheel Co., 1859 Altgeld St., Chgo.

Rod Cutters

Armstrong-Blum Mfg. Co., 841 N. Francisco
Av., Chicago

Lewthwaite Mch. Co., T. H., 311 E. 47th St., N.Y.

Straightening Machines

Whitney Metal Tool Co., Rockford, Ill.

Sanders, Bench

Up To Date Machine Works, 2800 S. Wabash
Ave., Chicago

Stud Setters

Procurier Safety Chuck Co., 14 S. Clinton
St., Chicago

Sanding Machines

Up To Date Machine Works, 2800 S. Wabash
Ave., Chicago

Tap Extractors

Walton Co., Hartford, Conn.

Scraping Machines

Anderson Bros. Mfg. Co., Rockford, Ill.

Tap Holders

Procurier Safety Chuck Co., 14 S. Clinton
St., Chicago, Ill.

Shafts, Flexible

Strand Co., N. A., 5001 N. Lincoln St., Chgo.

Tapping Attachments

Procurier Safety Chuck Co., 14 S. Clinton
St., Chicago, Ill.

Shaping Machines

Gosborne & Sexton Machy. Co., Columbus, O.

Tapping Jigs, Universal

Heuser Mfg. Co., 1838 No. Paulina St.,
Chicago, Ill.

Shears, Hand

Armstrong-Blum Mfg. Co., 841 N. Francisco
Av., Chicago

Lewthwaite Machine Co., T. H., 311 E. 47th

St., New York

Whitney Metal Tool Co., Rockford, Ill.

Tapping Machines and Attachments

Burke Machine Tool Co., Cincinnati, Ohio

Procurier Safety Chuck Co., 14 S. Clinton

St., Chicago, Ill.

Whitney Metal Tool Co., Rockford, Ill.

Shear, Power

Dreis & Krump Mfg. Co., 7440 Loomis
Bvd., Chicago, Ill.

Thermometers, Resistance Type

Illinoi Testing Laboratories, Inc., 180 West
Austin Ave., Chicago, Ill.

Shears, Slitting

National Machine Tool Co., Racine, Wis.

Dreis & Krump Mfg. Co., 7440 Loomis

Bvd., Chicago, Ill.

Threading Machines, Automatic, Stud

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Special Tools and Machinery

American Tool Works, Inc., Hartford, Conn.

Threading Tools

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Ridge Tool Co., Elyria, Ohio.

Speed Reducers

Abart Gear & Machine Co., Cicero, Ill.

Boston Gear Works, Inc., North Quincy,

Mass.

Chicago Gear Works, 789 W. Jackson Blvd.,

Chicago, Ill.

Cullinan Wheel Co., 1859 Altgeld St., Chgo.

Foots Gear Works, 4800 West 18th St.,

Chicago, Ill.

Tool Holders

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Western Tool & Mfg. Co., Springfield, O.

Classified Finding Index

Tools, Boring

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago.

Tools, Lathe and Planer

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago.

Tools, Machinists'

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago.

Tube Flanging Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Universal Drill Jigs

Heuser Mfg. Co., 1888 No. Paulina St., Chicago, Ill.

Universal Joints

American Tool Works, Inc., Hartford, Conn.
Boston Gear Works Inc., Norfolk Downs, Mass.

Used and Rebuilt Machinery

American Machinery Co., Cleveland, Ohio
Armstrong, J. H., Waterloo, Iowa
Atlas Equipment Co., 114 S. Clinton St., Chicago, Ill.
Bernstein, Geo. M., 221 N. Elizabeth St., Chicago, Ill.
Bleser Mfg. & Mch. Co., Springfield, Ill.
Brady Mfg. Co., Detroit, Mich.
Brookfield, Percy M. & Son, 114-118 Liberty St., New York City
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Cincinnati Mch. & Supply Co., Cincinnati, O.
Columbus Machinery Co., Fort Wayne, Ind.
Consolidated Machine Shops, 2852 Fulton
Chicago, Ill.
Craig, Jr., Thomas H., Bridgeport, Conn.
Davis Machinery Co., Toledo, Ohio.
Detroit Gasket & Mfg. Co., Detroit, Mich.
Eastern Machinery Co., Cincinnati, O.
Elyria Belting & Mch. Co., Elyria, Ohio.
Emerson & Co., Louis E., 1761 Elston Ave., Chicago, Ill.
Easley Machinery Co., E. I., 826 Kees St., Chicago, Ill.
Goldman, Harvey H., Detroit, Mich.
Godsamer Machinery Co., 826 W. Lake St., Chicago, Ill.
Herben Machinery Equipment Co., 30 S. Clinton St., Chicago, Ill.
Hill, Clarke & Co., 648 W. Washington Blvd., Chicago, Ill.
Indianapolis Machinery & Supply Company, Indianapolis, Ind.
Industrial Plants Corporation, New York City
International Mch. Co., Detroit, Mich.
Interstate Mch. Co., 130 S. Clinton, Chicago
Iroquois Machinery Co., Buffalo, N. Y.
Johnson & Sons Machine Co., Wm. C., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, Ohio
Kennard-Rafkin Mch. Corp., Jersey City, N. J.
Klauber Mch. Co., E. L., St. Louis, Mo.
Lucas & Son, J. L., Bridgeport, Conn.
McDonald Machinery Co., St. Louis
Marr-Galbreath Mch. Co., Pittsburgh, Pa.
Midland Steel & Equipment Co., 402 South Clinton St., Chicago, Ill.
Midwest Equipment Co., 628 W. Lake St., Chicago, Ill.
Mid-West Machine Tool & Supply Company, Davenport, Iowa
Miles Machinery Co., Saginaw, W. S., Mich.
Morley & Co., 45 Mill St., Astoria, Long Island, N. Y.

Used and Rebuilt Machinery—Cont.

Norton-Broadway Machinery Co., Cincinnati, Ohio

O'Brien Machinery Co., Philadelphia

Oriatt & Co., D. C., Cleveland, Ohio

Osborne & Sexton Mch. Co., Columbus, O.

Reliance Machinery Sales Co., Pittsburgh, Pa.

Rentachler & Co., J. P., 6722 N. Maplewood Ave., Chicago, Ill.

Reynolds & Son, George T., Providence, R. I.

Russell Machine Co., Pittsburgh, Pa.

Scott-Sanabach Mch. Co., 4607 W. 20th St., Chicago

Segal Machinery Co., 800 W. Lake St., Chicago, Ill.

Slewek Tool Co., Ferndale, Mich.

Simmons Machine Tool Corp., Albany, N. Y.

Stegeman Machinery Co., Milwaukee, Wis.

Strong, Carlisle & Hammond Co., Cleveland,

Sun Machinery Co., 28 Van Buren Street, Newark, N. J.

Surplus Tool & Equipment Co., Toledo, Ohio

United Mch. & Supply Co., St. Louis, Mo.

Victor Machinery Co., 128 S. Clinton Street, Chicago, Ill.

Victor Machinery Exchange, 351 Center St., New York City

Walter, C. H., Elkhart, Ind.

West Penn Machinery Co., Pittsburgh, Pa.

White Mch. Co., A. D., 108 N. Jefferson St., Chicago

Wigginworth Mch. Co., Cambridge, Mass.

Wohleck Machinery Sales, 21st & Marshal Blvd., Chicago, Ill.

Valves, Foot, Lever & Solenoid

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Vises, Drilling Machine

Armstrong-Bunn Mfg. Co., 341 N. Francisco Av., Chicago

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Graham Manufacturing Co., Providence, R. I.

Heuser Mfg. Co., 1888 No. Paulina St., Chicago, Ill.

Martin Tool & Die Works, J. E., Springfield, O.

Vises, Machinists'

Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine

Graham Manufacturing Co., Providence, R. I.

Hartford Special Mch. Co., Hartford, Conn.

Vises, Shaper

Graham Manufacturing Co., Providence, R. I.

Welding Machines, Electric Spot

Eisler Engineering Co., Inc., Newark, N. J.

Welding Machines, Resistance

Eisler Engineering Co., Inc., Newark, N. J.

Wheel Dressing Diamonds

Mendes Cutting Factories, Inc., 505 Fifth Ave., New York City

Wheels, Grinding

Chicago Wheel & Mfr. Co., M. C. Tool Div., 116 S. Aberdeen St., Chicago, Ill.

Woodworking Machinery

Tannevitz Works, Grand Rapids, Mich.

Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted, or For Exchange, set in uniform style, will be published in the Classified Section at the rate of 60 cents a line across the page, each issue, plus \$3.00 for name and address. Minimum charge, \$6.00. No display permitted.

Write directly to those offering the machines for sale, for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants in either new or used machinery and the publisher will pass them along to the advertisers.

FOR SALE BY

J. Bleser Mfg. & Machy. Co., 16th & Madison St., Springfield, Ill.

Drill, radial, 7' Bement.
Grinder, knife, 72" Hickok.
Hydraulic press, 300-ton horizontal.
Lathes, all sizes and kinds.
Motors, electric, all sizes.

Millers, No. 3 Cinti., 3-H LeBlond.
Punch presses, o. b. i. and arch.
Shapers, 20" Smith & M., 12", 16".
Slotter, 13" Bement.
Steam pumps, Deane & Worth.

FOR SALE BY

Midland Steel & Equipment Co., 400 S. Clinton St., Chicago, Ill.

Hack saw, 8x8 Racine high speed.
Lathe, 20 $\frac{1}{2}$ x8 $\frac{1}{2}$ Walcott, q. c. g.
Miller, No. 4 Becker plain.
Radial drill, 3' Western.
Radial drill, 5' Cincinnati-Bick. univ.

Shaper, 14" Rockford.
Shaper, 24" Rockford.
Sheet leveler, 36" Poole, 16 ga.
Stromberg Electric Time System,
with 12-job recording clocks.

FOR SALE BY

E. L. Klauber Machinery Co., 320-22 S. Third St., St. Louis, Mo.

Lathes, 16x8' Lehman q. c. g.; 22"x12' Lodge & S. q. c. g.; 30"x14' Bradford.
Millers, No. 2 Cincinnati plain; No. 2 Hendey Lincoln; No. 3 Burke.
Multiple drill, 10 spindle Gardam, adjustable spindles.
Presses, hydraulic 20 and 30 ton capacity, Lourie & Southwark.
Screw machines, No. 0 Brown & Sharpe, automatics; 24" Gridley, 4 spindle.
Tapping machines, 8" Rickert Shafer; No. 6 St. Louis.

FOR SALE BY

Segal Machinery Co., - - -

Air compressors, all sizes.
Drill, 5' Dreses, s.p.d., gr. box, \$350.
Drill, 25" Barnes, power feed.
Lathe, 16x7 Chard, q. c. g., tap. att.
Lathe, 26x14 Blaisdell, semi q. c. g.
Surface grinder, No. 3 Brown & Sharpe

Miller, No. 2 Osterlein, swivel vise.
Screw machine, No. 3 Foster, equipt.
Shaper, 24" Milwaukee, b.g., sw. v.
Planer, 24x24x6 Pond, and vise.
Planer, 36x36x10' L. & D., 2 heads.
Planer Type, magnetic chuck, \$250.

FOR SALE BY

Columbia Machinery Co., 130 E. Columbia St., Fort Wayne, Indiana

Automatic, 2-G Brown & Sharpe, serial No. 4348, motor drive.....	\$600.
Drill, multiple, No. 11 Natco 8 spindle.....	175.
Miller, No. 3 Ryerson-Conradson plain, s. p. d.....	450.
Miller, No. 2 Cincinnati high power plain, rapid power traverse.....	500.
Miller, No. 2 Van Norman, dividing heads, slotting attach., complete.....	650.
Screw machine, No. 3 B. & O. geared head, with motor.....	250.

USED AND REBUILT MACHINERY

FOR SALE BY

Wigglesworth Machinery Company

199 Bent Street,

Boring mill, No. 0 G. & L.
Drill, 5' American universal.
Engraver, E-5 Keller.
Gear hobber, Milson.
Grinder, 20" x 68" Landis plain.
Grinder, Pratt & W. 14", model B.
Lathe, 25"-28" x 24" Le Blond, gd.hd.

Cambridge, Mass.

Lathe, 30" x 15" Niles-Bement-Pond.
Lathe, 40" x 26" Flather.
Miller, No. 3 Brown & Sharpe.
Miller, 3B heavy Brown & Sharpe.
Jones & Lamson, 2 spdl., like new.
Shear, combination, Schatz.
Turret lathe, No. 6 Warner & S.

Send for Complete Stock List.

FOR SALE BY

Marr-Galbreath Machinery Co.,

Quality Not Reflected in These Low Prices.

Air comp., gas dr., 285 cuft... \$ 500.
Air comp., Chicago, 246 cuft... 300.
Boring mill, No. 0G. & L., 34" bar... 750.
Boring mill, 30" Colburn, tr. hd... 375.
Boring mill, 72" Cin "PRT," 3250.
Brake, steel, Chgo. 8" x 14 ga. b.d... 250.
Brake Keene toggle, 10" x 20 ga... 400.
Brake, Ohl 8" x 16 ga., pr. type... 800.
Die sinker, No. 3 P. & W., r. t... 350.
Drill, 26" Rockford, tap att... 250.
Drill, 20" Barnes, all geared... 100.
Drill, 14" Leland-G., b. b. sen... 100.
Gear cutter, 18" Newark... 200.
Gear cutter, (Pinion) 1x1" S & C... 200.
Grinder univ.t &c. No. 2 Grn'fd... 150.
Hack saw, 6x6" Milford, m. d... 75.
Hack saw, 8x15" Economy... 75.
Hack saw, 13" x 16" Peerless... 250.
Hammer, 30 lb. United, pwr... 85.
Hammer, 40 lb. Bradley, helve... 150.
Hammer, 125 lb. Beaumy pwr... 250.
Hammer, 800 lb. Erie s.f. atm... 300.
Header, cold 8" Waterbury-F. 1200.
Keyseater, 24" x 24" Morton... 500.
Lathe, 20" x 8" Hendey, t. a... 450.
Lathe, 20" x 10" Hendey, t a... 600.
Lathe, 20" x 10" American gd. hd... 400.
Lathe, 28" x 14" S. & B., t. a. ck... 550.
Lathe, 14" Fay automatic... 750.
Magnetic chuck, 14" x 40" Head... 175.
Miller, univ. No. 14 Becker... 300.
Miller, pl. No. 2-B Milw. m. d... 200.
Miller, plain No. 3 Cincinnati... 300.
Miller, No. 3 Ohio hvy. 85¢ new... 500.
Miller, pl. No. 4 Ohio long new... 650.
Miller, pl. No. 4 Ohio Special... 750.
Pipe machine, 8" Jarecki... 450.
Planer, 30x30" x 10" W., P. 2-hds... 350.
Press, No. 1 Manly arbor... 25.
Press, Arch, No. 3A Mossberg... 100.
Press, Arch, No. 3A Mossberg
dial feed... 150.
Press, Arch No. 3-A Mossberg
roll feed... 150.
Press, D. C. No. 138A Stoll,
3" stroke... 850.

55 Water St., Pittsburgh, Pa.

Press, Emb'ng 50-ton Ferracute	\$ 600.
Press, horn, No. 2 Michigan	110.
Press, horn, 42-h. p. Toledo	225.
Presses, o. b. i., No. 4 Toledo	
No. 18 Bliss, each	100.
Press, o. b. i., No. 3 Niagara	135.
Press, o. b. i., No. 4 Niagara	165.
Press, o. b. i., No. 21 Bliss	250.
Press, Punch No. 1-C Standard	60.
Press, screw, No. 87 Niagara	50.
Press, S. S. No. 74 1/2 S Bliss s.c.	700.
Press, S. S. No. 78 1/2 Bliss	3,000.
Press, Wheel, 60-ton, 34" W-S	200.
Punch & s., Peila triple comb.	650.
Punch & s., No. 52 Beloit	125.
Punch & s., s.e., No. 6 L & A.	100.
Punch & s., s.e., No. 4 L & A.	250.
Punch & s., d. e., cap. 14" x 1"	500.
Punch, gang, 48" x 40 tons	200.
Rolls, crimping, 6 1/2" x 16 ga.	350.
Rolls, 10" x 3" U. S. Forming	150.
Saw, Cold, Kspen-Lucas, 7" rds.	200.
Shapers, 16" G. & E., "H. D."	
for motor drive	500.
Shaper, 24" G. & E. "H. D."	
for motor drive	865.
Shaper, 20" Cincinnati, m. d.	450.
Shaper, 20" Stockbridge	250.
Shaper, 31" Smith & Mills	375.
Shaper, 24" P. & J. "KT." m. d.	400.
Shear, Schatz combined, 219 FA	75.
Shear, slitting No. 24-S Buffalo	250.
Shear, gap, 42" x 8" x 18" gap	500.
Shear, squaring, 10" x 16 ga Ohl	500.
Shear, throatless, 8" Lenox	275.
Slotter, Garvin, die, 12" R. T.	150.
Testing mch., 100-ton Olsen	250.
Testing machine, Cement	125.
Turret, No. 4 W. & S. power	
feed to turret	250.
Turret, 2" x 24" J. & L., chuck	165.
Welders, arc, 200 amp. USL	200.
Welder, arc, 200 amp. Lincoln	250.
Welder, arc 300 amp. Lincoln	300.
Welder, arc, 400 amp. Lincoln	350.
Wire crimping mch., 8 pr. rolls	75.

Partial List. Get Our Complete Stock List.

USED AND REBUILT MACHINERY

FOR SALE BY

West Penn Machinery Company

1206 House Building.

Air compressors, 30 to 2500 cu. ft.
Boilers, Sterling, W. T. 550 & 1200 h
Boring mill, 24" Bullard, New Era.
Bor. mills, 42" & 62" Bullard, 2 heads.
Boring mill, 72" Cin., 2 hds. s. p. d.
Boring mill, 10-16, Niles, b. d.
Bor. mill, Niles floor type, 4" & 6" bar.
Boring mill, hor. 4" bar Bement.m.d.
Brake, box & pan, 60"x10 ga. D.&K.
Brake, 10' Dreis & K. 8", m. d.
Bulldozers, Nos. 2, 4, 6, 9, 28, & 30.
Cranes, Electric Traveling.
Draw bench, 50,000 lb. Brightman d
Draw bench, 180,000 lb. Stand. m. d.
Drill, mult. 4-spdl. Avey, belt drive.
Drill, 4-sp Colburn, table 20x72.
Drill, hvy., duty, D-6 36" Colburn.
Drill, mult., 16 spdl. Fox No. 1 m.t.
Drill, radial, 4" Prentice, t. a., b. d.
Drill, radial, 8" Cin-Bick, t. a., s.p.d.
Drill, radial, 8" N. B. P., mtr. on arm
Drill, rad., 6" Cin Bickford, t.a., m.d.
Drill, radial, 6" Dresses, s. p. d.
Drills, upright 10" to 36".
Engine, gas, horiz., 260 h.p. Bessemer.
Flanger, McCabe, 8" capacity, dies.
Forge, No. 40 Champion, 40x30.
Forging mch. 14" Acme, st. fr. b. d.
Gear cutters, 11", 18" & 24" Gleason.
Gear cutter, spur, 36"x10" Newark.
Grinder, elec. 8" B. & D., dbl. end.
Grinder, nail die, No. 101 Bridg., m.d.
Grinder, surface, No. 2 Brown & S.
Grinder, surf. 42" Spring ,tbl. 18x84".
Grinder, surface, No. 16 Blanchard.
Grinder, surf-8" Diamond, m. d.
Grinder, tool & cut., No. 2 Walker.
Grinder, univ. No. 3 Landis, 12x40".
Generators, eng. oil, g.s., belt & mtr.
Hammer, Blacker, power, 25-lbs.
Hammers, Nos. 2-B, 3-B, 4-B, Naxel.
Hammers, steam, 600 lb. to 6000 lbs.
Keyseater, Nos. 3 and 8 Mitts & M.
Lathe, 16"x6' Le Blond, q. c. g., d.b.g.
Lathe, 16"x6' Hendy, q. c. g. t. a. m.d.
Lathe, 14"x12' Lodge & S., g.h., m.d.
Lathe, 24"x12' Prentice grd hd.s.p.d.
Lathe, 24"x16' Bridgeford, g.hd.m.d.
Lathe, 28"x21' 6" Bridgeford, g. h.
Lathe, 36"x18' Putnam, l.c.g., t.a.b.d.
Lathe, 48"x34' Bridgeford, g. h., m. d.
Lathe, 50"x16' Putnam, l. c. g., t.a.b.d.
Lathe, 54"x17' Pond, semi-grd, hd.
Lathe, 61"x39' H.-S & G.grd.hd.m.d.
Lathe, gun boring 49"x82" m. d.
Lathe, turret, No. 8 Warner & S.
Lathe, turret, 18" Libby, m. d.
Lathe, turret, 24" Steinle, 64" hole.
Lathes, spinning, 22"x5", b. b., b. d.
Miller, pl., Nos. 3 & 5 Cinc., s. p. d.
Miller, pl., No. 34 Ohio, tbl. 13x60".
Miller, universal, No. 3 Le Blond.
Miller, univ. Cin.tbl. 56"x134"m.d.

Pittsburgh, Pa.

Nut tapper, Acme, 10-spdl 14", s. auto.
Nut mch.. Wat-Far, 8" cold. b. d.
Pipe machine, 2" Landis, belt drive.
Pipe mches., 4", 6" & 8" Oster.
Planer, 30"x30"x10' Woodward & P.
Planer, 60"x20' N -B.-P. rev. m. d.
Planer, 96"x20' N -B.-P. mtr. drive.
Planer, 96"x96"x33' 4 hds. rev. m. d.
Planer, o. s. 42"x14' Det. & H., b. d.
Planer, o. s., 48"x48"x16' D. & H.m.d.
Press, arbor, No. 17 Green., 18-ton.
Press, cam. No. 69N Bliss, dbl acting.
Press, o. b. i. Bliss, Nos. 18, 19, 20.
Press, No. 4 Nia, o. b. i. grd. 3" str.
Press, No. 64 Wat. Far. draw & red.
Press, screw, No. 87 Niagara.
Press, forging, United 1000 ton hyd.
Press, wheel, 200-ton Elmes, 48".
Press, wheel, 300-ton, motor drive.
Punch & s., No. 5-H Hertsch hand.
Punch, No. 56 H. & W. 14", 12" thrt.
Punch, No. 7 Thomas, 8", spac.tbl.
Punch, No. 12 Thomas, 14", 1", 78" thrt.
Punch, mult., No. 8 H. & J. 10".
Riveters, air, hammer, spinning.
Roll,bend,50" Bertsch,3/16"init type
Roll, bending, No. 7 Bertsch 8" x 8".
Rolls, bend, 10"x8" Bertschi, t. m. d.
Rolls,bend,10"x8" Wicks, pyr.t. m. d.
Rolls, bend, 14"x1" Bertsch pyr. t.
Saws, band, 26 and 32" Fay & Egan.
Saws, friction, Nos. 2 & 3 Ryerson.
Saw, hack, 4"x4" Racine Jr., m. d.
Saw, hack, No. 4 Robertson, 8"x8".
Saw, cold, No. 6 Coch., Bly, s. p. d.
Screw mchs. Nos. 52, 53, 55 Nat. A.
Shapers, 16", 20", 24" & 36" G. & E.
Shaper, 24" Flather, m. d.
Shaper, 32" Cincinnati, m. d.
Shaper 48" Morton draw cut, m. d.
Shear, angle, 6"x6"x1" H. & J.
Shears, alligator, 14", 2", 3" & 4".
Shear, bevel, Lennox 4", b. d.
Shear, circle, No. 13A Niagara, b. d.
Shears, foot, 30" nd 36" Pexto.
Shear, guil. No 5 H. & J. 4"sq., m.d.
Shear, serpentine, 3/16" Lennox.
Shear, 8" Bertsch, 8", 18" thr., m. d.
Shear, 12" x 4" Wheeling, 31" gap.
Shear, slit, O. E. cap, 4", 14" blade.
Slotted, 16" B -M.tbl. 30" dia., m. d.
Slotted, 26" Bement, crank: 15" Dill.
Straightner, 2-A Kane & R. 20-roll.
Straightner, 72" Newbold, 9-roll m.d.
Straightners, 4", 4" Abramson.
St'r. & sh., No. 1026 B. & J. 9"x3/16"
Testing mch., Brinnell hardness.
Thread rollers, 5/16", 1" & 14", b. d.
Upsetters, 1" to 6".
Welders, arc, 200 amp. Hobart, a. c.
Welding gen., arc, 200amp.West 220.
Welder, built, 40 k. w. T. W. B-450.
Welder, seam, 100 k. v. a Gibb, El.

USED AND REBUILT MACHINERY

FOR SALE BY

Harvey H. Goldman, - - 9040 W. Jefferson Ave., Detroit, Mich.

Automatics, Gisholt Simplim., m. d.
Automatics, 1 $\frac{1}{2}$ " model C, Cleveland.
Automatics, 1 $\frac{1}{2}$ "x7' New Britain.
Bolt cutter, Landis 2 spdl. 4", m. d.
Drills, 4 spin. Avey No. 2, 8" o. b.
Drills, 4 spin. Avey No. 2, 12" o. h.
Drills, 3 spin. Avey No. 2, 12" o. h.
Drills, 3 spin. Avey No. 2, 8" o. h.
Drills, 3 spin. Fdlund No. 2B.
Drills, 3 spin. Detroit, m. d.
Grinder, No. 2 Gardner disc, m. d.
Grinder, No. 65 Heald cyl. & jig.
Grinder, No. 2 Norton tool & cutter.
Lathe, 15"x8' South Bend, m. d.

Lathe, 16"x6' American, g. h., m. d.
Miller, No. 2 Craftsman Cont. Prod.
Nibbler, No. 1-A Campbell.
Polishers, No. 3 Gardner, (7).
Press, No. 3 Loshbough J., o. b. i.
Separator, chip, McKenzie, m. d.
Shaper, 24" American, motor drive.
Shear, No. 16-A Niagara rotary, md.
Shear, No. 262 Pexto, m. d., 42"x10ga.
Tapper, No. 2b.g. Garvin, m.d., v.sp.
Turret lathe, No. 4 Millholland univ.
Welder, No. SL-24 Gibb Projection.
Welder, 12 k.v.a. Am. Elec. Fusion.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 Hadley Street,

St. Louis, Mo.

Air compressors, all sizes.
Bar shear, 5"x8".
Bolt threaders, 1" & 1 $\frac{1}{2}$ " Landis.
Boring mills, 36", 42", 60" & 72".
Bulldozers, No. 3 and No. 4.
Drill, 1-spindle Avey.
Drill, 6" arm American radial.
Grinder, 12"x60" Landis universal.
Grinder, 12"x36" Thompson univ.
Grinder, 24"x96" Landis cylinder.
Grinder, No. 80 Heald cylinder.
Hammer, No. 3B Naze.
Lathes, 16"x8" tool room, (2).
Lathe, 16"x7' P & W. geared head.
Lathe, 16"x9' Lehman.
Lathe, 24"x12' Schumacher & Boye.
Lathe, 36"x15' American, q. c. g.

Lathe, 30"x16' Prentice, geared hd.
Miller, No. 2 Cincinnati, plain.
Miller, Ingersoll slab, 27"x23"x14'
bed, 4 heads, motor drive.
Pipe machines, 4" and 8".
Planer, 60"x48"x10' Gray.
Press, No. 24 Toledo cam drawing.
Press, No. 59 Niagara grd. tie rod.
Press, No. 723 Toledo cam drawing.
Punch, No. 14 W. W., 12" throat.
Punch, two 20" throats, cap. 1" in 1".
Sand slinger, Beardsley & Piper.
Shaper, 16" Smith & Mills.
Shaper, 26" Smith & Mills.
Shear, circle, No. 310 Niag. 48" thr.
Turret lathe, No. 3A W. & S., 5"
hole, motor drive.

FOR SALE BY

Geo. M. Bernstein & Co., - -

14 S. Clinton St., Chicago, Ill.

Miller, No. 3 Cinn. univ., high pwr.;
vertical and dividing heads, etc.
Brake, pwr. No. 166 Chicago, 6"x $\frac{1}{2}$ ".
Bolt cutter, 18" Reliance; 9" std dies.
Bolt cutter, 2" National; 37 sets dies.
Drills, 4" b. b. bench; arranged
motor drive, new \$33.25.
Drills, 4 Avey, 4" cap., double b. b.
Drill, 4 sp. Allen, No. 2m. t. b. b.
Drill, 24" Barnes camel back tap. att.
Drill, No. 2 & 4 Col. hvy. duty, mfg.
Drills, 20, 24, 26 & 34" b. g., p. fds.
Drill, 24" Fosdick & 2" Silver s. p. d.
Die filers, No. 5 & 6 Rearwin, arr.
motor drive, new.
Grinder, No. 2 LaSalle surf. chuck.
Grinder, No. 13 B. & S. universal.
Hammers, No. 1 $\frac{1}{2}$ B, 2A & 4A H. S.
riveters.

Lathe, 11"x3' 6" Sheldon m. d., semi.
Lathe, 14"x6' Seneca F., p. c. g., ck.
Lathe, 15"x6' Rock., semi-q.c.g., chk.
Lathe, 20"x9" G. K. q. c. g., chuck.
Lathe, 32"x16'S. & B., q. c. g., chks.
Lathe, No. 4 Mill. turret, 1 $\frac{1}{2}$ " cap.
Miller, No. 4 Burke hand; pwr. feed.
Miller, 44"x12" thread; Pratt & W.
Miller, No. 1 Bick. hand; pwr. fds.
Miller, No. 1 $\frac{1}{2}$ A Rockford, plain.
Miller, No. 1 Kemp. univ., vert. hd.
Press, No. 3 Rock. o. b. l.; 2" str.
Saw, 6"x6" H. & R. metal band.
Screw mch.; No. 2G B. & S. auto.
Shaper, 16" Springfield crank.
Shaper, 16" Smith & Mills, crank.
Shaper, 20" Kelly, crank; bk. grd.
Scleroscope, Shore, model "C".
Tappers, Nos. 1 & 2 Garvin auto.

USED AND REBUILT MACHINERY

FOR SALE BY

Stegeman Machinery Co.,	3530 W. Pierce St., Milwaukee, Wis.
Automatics, 1", 14", 14" 4-spdl. model G Gridley and 4" single spindle.	
Drills, 2 No. 8-D Colburn hvy. duty, cmpd. table, var. d. c. motor drive, No. 2 spdl. Detroit; No. 12, 20-sp. Natco; 1, 2 & 3-spdl. Avey, Henry & Wright & Leland-Gifford h. s.; b.b., many others.all types & sizes.	
Grinders, Taylor & Fenn internal, No. 70 Heald internal, No. 6 Landis cylinder, 10x36 Norton cylindrical, and other sizes and types.	
Lathes, 14x7 Hamilton q. c. g., c. d., 24x14 LeBlond q. c. g. taperattach, 4" raising blocks, 36" swing; various sizes and types including 14" Fay automatic m. d., like new.	
Metal washer, Blakeslee washer, Crescent rinser, tandem conveyor type, m. d., 24" wide 16" high.	
Millers, No. 2-B K. & T. pl., No. 1-A K. & T. vert., No. 2-M Cin. vert.	
Pipe machines, 4" Oster, 8" Stoever.	
Lathe, 18x10 Monarch, 8 speed, hel. grd. hd., a. c. motor-in-base excel. cond.	
Miller, No. 2 Kempsmith Maximiller, ex. long 72" table, vert. hd., a real buy.	
Your inquiries solicited—many other machines available.	

FOR SALE BY

Scott-Bansbach Machinery Co.,	4607 West 20th St., Chicago, Ill.
Miller, No. 2H B. & S. plain, cone type, with vise, c/s and arbors.....	\$ 400.
Miller, No. 2 MU Garvin universal, fully equipped	350.
Miller, 12" Cincinnati, mfg. type, s. p. d., vise and pump.....	150.
Miller, Briggs, G. & E. manufacturing, 16"	75.
Miller, No. 5 Becker vertical, no rotary.....	300.
Miller, No. 7 Becker, Lincoln type.....	75.
Miller, Ingersoll slab, 42"x36"x9"	400.
Planer, 24x24x6 Ohio heavy duty, 1 head.....	250.
Planer, 36"x36"x12" Cincinnati with 2 heads	800.
Press, No. 0 Consolidated bench o. b. i. with mtr., 14" str. 350 lbs. 7½ ton	100.
Press, No. 18 Bliss o. b. i., 14" stroke, 750 lbs., 12 ton capacity	100.
Press, No. C4 Farracute o. b. i., 2" stroke, 3800 lbs., 35 ton capacity	300.
Press, No. 64 V. & O., s. s., d. c., 71 ton, 24" str., 22" between.....	700.
Punch, 10" throat, single end, Kneeland or Spaulding	each 100.
Riveter, No. 3 A, H. D. High speed hammer, cap. 4", belt driven.....	150.
Riveter No. 5 A, High speed hammer, cap. 4", motor shelf.....	275.
Saw, No. 2 Klem, band, for metal cutting, belt drive.....	300.
Saw, Napier, model B, band, for metal cutting, belt drive.....	300.
Scleroscope, Shore complete with stand and blocks, model C	125.
Shear, 30" Hertsch, 16 gauge, 12" gap, foot power.....	75.
Separator, National, oil, 11 quart capacity	50.
Separator, oil, American 1½ bushel.....	200.
Shaper, 20" Cincinnati, crank, back geared, vise and c/s.....	350.
Shaper, 24" Walcott, H. D., back geared crank, vise and c/s.....	400.
Swedger, No. 4 Etna, 2" tube capacity	250.
Tapper, Rickert-Shafer, 4" cap., bench type	50.
Tapper, No. 1 Garvin Automatic, capacity 4" iron, 4" steel	75.
Threader, 1" H. & G., floor type	100.
Turret lathe, 24x10" Millholland, for chuck and bar work.....	400.
Welder, butt, Toledo, 8 KW., capacity 4" round	150.
Welder, spot, American, 12 k. v. a., 12" throat, Type L. D. A.....	200.

USED AND REBUILT MACHINERY

FOR SALE BY

United Machinery & Supply Co., 1241 Walton Ave., St. Louis, Mo.

Bending machine, Wallace No. 15.

Blue print machine, Pease, cyl. type

Brake, 10'x3/16" Dreis & K., m. d.

Hammers, Little Giant, 25 & 50 lbs.

Let us have your inquiries.

Pug mill, Mueller.

Punch presses, Nos. 56, 167 and 168

Toledo.

Rolls, 12"x $\frac{3}{4}$ " & 60"x10 ga.

FOR SALE BY

Mid-West Machine Tool & Supply Co..

Davenport, Iowa

Drill, 4 spindle Avey No. 2MT, p.f.

Drill, ISS Garvin duplex, 2 $\frac{1}{2}$ " cap.

Grinder, 10"x36" Norton.

Grinder, No. 10 B. & S. ext.

Hobbers, Nos. 3, 12-B & C.

Lathe, No. 9 LeBlond multi-cut.

Lathe, 18" Libby H. D., turret.

Millers, Nos. 9-Y & 2 Brown & S.

Radial drill, 4' American sensitive.

Turret lathe, Nos. 2 & 6 Warner & S.

FOR SALE BY

Surplus Tool & Equipment Company

Cor. St. Clair & Washington,

Toledo, Ohio

Lathe, Fitchburg 14x4 ch. dr., cheap.

Miller, No. 32 Kempsmith....\$166.

Pipe machine, 2" Rogaco elec., mtr.

Planer, 2"x6" Cincinnati.

Presses, 61, 62 Bliss; 31, 32, 75 Tol.

Punch, 30 & 36" for boiler plate to 4".

Radial drill, 5' Fosdick, fine shape.

Shear, Wickes rotary bevel.

Taps, new Whitworth, cheap.

We buy steel bar stocks.

FOR SALE BY

C. H. Waters Machinery Co.,

221 Harrison St., Elkhart, Ind.

Grinder, Norton cylindrical 22"x96".

Grinder, Landis cylindrical, 10x29".

Grinder, No. 3 Brown & Sharpe cutter and reamer.

Hammer, No. 3A High Speed.

Lathe, 16"x8" Lodge & Shipley, q. c. g., taper attachment.

Lathe, 20x8' LeBlond, q. c. g.

Miller & drill., No. 1 $\frac{1}{2}$ Knight vert.

Press, No. 104 Bliss consol, m. d.

Radial drill, 3' Fosdick, s.p.d., mtr.

Radial drill, 4' Western.

Shapers, 16", 20" and 24".

Many others.

FOR SALE BY

H. F. Wolnick Machinery Sales

Phone Lawndale 1777

21st & Marshall Blvd., Chicago

Boring mills, up to 10'.

Drill presses, 1, 2, 3-spindles.

Lathe, 18x9 American.

Lathe, 26x12 geared head, tap, att.

Millers, plain, universal, vertical.

Planers, 24x24 to 48x48x12.

Press, No. 4 $\frac{1}{2}$ R. & K., o. b. l.

Press, No. 78 Toledo, geared m. d.

Shapers, 16-20-24".

Gear Hobbers, Shapers, Generators.

FOR SALE BY

J. P. Rentschler & Co.,

6722 N. Maplewood Ave., Chicago

Milling mch., No. 3A B. & S. univ.

Presses, several inclinable.

Press, No. 2 W. Bliss wiring.

Presses, Nos. 201A, 203B Toledo d.c.

Press, embossing, 500 ton cap.

Presses, Nos. 21 & 24 Consol. horning

Presses, Nos. 102 & 104 Cons., d. c.

Press, No. 74 $\frac{1}{2}$ x75 $\frac{1}{2}$ Bliss s. s., 8" str.

Presses, Nos. P-1, P-3 & P-5 Ferra.

Presses, Nos. 74 $\frac{1}{2}$ & 75 $\frac{1}{2}$ Bliss, s. s.

Presses, No. 163 & 164 $\frac{1}{2}$ Toledo, tog.

Press, No. DD-201 Ferracute toggle

Press, No. 5C Bliss, double crank.

Press, No. 14 $\frac{1}{2}$ Toledo horn., geared.

USED AND REBUILT MACHINERY

FOR SALE BY

Midwest Equipment Co., -

Air compressor, 9x8, I. R. compl.
Air compressor 19x12x16, I. R. compl.
Gear hob., No. 12, 3 B.-C., arbor, grs.
Grinder, universal, B. & S., No. 2.
Grinder, No. 6 Gardner, b.b., 26" discs,
Grinder, Cinc. No. 1 tool & cutter.
Hack saw, Napier, pwr., 10x10" cap.
Hoists, 2-ton Shepard, electric, a.c.
Lathe, 17x8 Sidney, l.c.g., complete.
Lathe, 16x8 Hendy, q. c. g., tap, att.
Lathe, 14x6 Sidney, quick ch. gear.
Lathe, 32x16' Schumacher & B., q.c.g.
Lathe, 34x10' Wolcott, q. c. g., comp.
Lathes, Stark 4" & 4" cap. with col.
Miller, No. 5 B. & S., plain.

Planers, Lathes, Screw Machines, Air Compressors, Woodworking Machines.

628-30 W. Lake St., Chicago, Ill.

Miller, No. 1 Kempsmith pl., comp.
Miller, No. 1½ Rockford, plain.
Miller, No. 2 Becker, vertical.
Press, No. 78-C Niagara dbl. crank.
Radial drill, 3' Cincinnati Bickford.
Screw machines, No. 2 B. & S. automatic with slotting attachment.
Screw machines, No. 4 Warner & Swasey.
Screw mchs., Nos. 4 & 3 Foster, w. f.
Shapers, 14", 16", 20" and 24".
Shear, Quickwork, pwr. dri. 14 ga. cap.
Shear, Beloit No. 52.
Welder, arc. 300 amp. Wilson, m.d.
Welder, spot, 27 kva, Taylor 440 v.

FOR SALE BY

The Jones Machine Tool Co., -

Band saw, No. 8 Marvel, mtr. dr.
Bolt cutter, 2" Landis (long bed).
Bolt cutter, 1½" Landis, single spdl.
Bolt cutter, 1½" Landis, dbl. spdl.
Boring mill, No. 32 G. & L., s.p. dr.
Drill, No. 14 Colburn heavy duty.
Gear cutter, No. 13 B. & S., bevel & sp.
Gear hobber, No. 12 Barber-Colman.
Grinder, No. 1 Diamond surf. 12x24"
Grinders, disc, various sizes.
Hack saw, 9x9 Peerless.
Keyseater, No. 1 Baker.
Lathe, 27"x16' American grd. head.
Lathes, shapers & planers, all sizes.
Milling machine, No. 2 B. & S. univ.
Milling mch., No. 3 LeBlond univ.

We have a large stock—Send for new list.
We Buy or Liquidate Complete Plants.

Front & Pike Sts., Cincinnati, Ohio

Radial drill, 5' Am. s. p. d., enc. hd.
Radial drill, 6' Am. s. p. d., enc. hd.
Rail drill, 10' Andrews 16-sp., 4" cap.
Square shear, 10' 3/16" cap.
Shear, 10' Poorman 14 gauge.
Shear, 60" Yoder, rotary, 16 ga.
Shear, 18" Southwark rotary, 7 ga.
Shear, 37" Toledo 16 ga. 15" gap.
Upsetters, 2" Ajax, belt drive.

PRESSES

No. 25 Niagara arch press.
No. 22 H Toledo 28" dbl. crank, grd.
No. 43 Robinson 46" dbl. crank, grd.
3-½" Toledo Inc. presses.
No. 76 Toledo, b. g. gap press.
50-o. b. inc. presses—various sizes.

FOR SALE BY

Brown Machinery Co., -

Broach, No. 1 LaPointe, sgl. spdl.
Drills: 24", 26" and 32"; No. 66-D
Moline 4-spindle Hole Hog.
Drill, Allen B., single spindle, m. d.
Drill, Demco b. b., m. d.
Grinders: No. 6 Besly dbl. spindle;
No. 220 Badger auto. disc; 12x30"
Modern, plain, s. c. e. s.; No. 4
Cincinnati, 14x72 cylindrical; P. &
W. 36" vertical surface.
Groover, power, 6" horn.
Lathes, 30" Blaisdell, 28" Harrington
gap. ext. bed; 26" Putnam, taper
att.; 18" & 16" Lodge & Shipley;
16" & 14" Monarch; 7" x 6" Lo-swing;
No. 4 Wood Tilted Turret.
Millers: No. 2 Hendey-Norton, univ.;
No. 3½ Fox; No. 4 Hendey Lincoln;

2333 N. 9th St., St. Louis, Mo.

American No. 1½ plain.
Planer, 42x42x10 Pond.
Press, No. 7 Zeh & Hahneman,
Nos. 1, 3, 4 Loshbough-Jordan.
Press, No. 4 Bliss, cons. comb. grd.
Punch, Cleveland C 3 in 4"; Rock
River Style L 3 in 4".
Punch & shear, No. 9C Beloit, 3 in 4".
Punch & shear, L & A. 4" cap.
Riveter, No. 5A High Speed, 4".
Shaper, 24" Ohio; 20" Queen City.
Shaper, 20" Columbia; 24" G. & E.
Shear, 62" underdriven, cap. 16 ga.
Shear, 4" Lennox bevel.
Threaders: 4" Geometric; National
4½" double head and single head.
Upsetter, 3" Ajax, steel bed.
Welder, 20 k. w. Agnew.

USED AND REBUILT MACHINERY

FOR SALE BY

J. L. Lucas & Son, Inc., - - - 3 Fox St., Bridgeport, Conn.

ROLLING MILLS

2-16x34" Farrel Rolling Mills, complete with extra rolls, motor drive with reduction gears. Practically new.

One with extra reduction for breaking down, the other for finishing. Will be sold for one-half price for quick sale. Write for full particulars.

FOR SALE BY

The E. L. Essley Machinery Co.

Telephone Lincoln 6320

Drill, 4 spindle, Leland-Gifford.
Lathe, 16"x8' American, motor in leg
Lathes, 15" and 18" South Bend.
Miller, No. 2 BS, K. & T., pl. dbl. o.a.
Miller, No. 3 Cincinnati Universal.
Planer, 30"x30"x8' Cleveland, O. S.

831 Rees St., Chicago

Planer, 52"x48"x12' Cleveland, 3 hds.
Press, No. 20½ Bliss, o. b. i.
Press, No. 102 Consolidated, dbl. cr.
Shears, 42" Stoll, 16 ga. cap.
Shears, 10' 3/16" cap. L. & A., m. d.
Welder, spot, 25 k. w. Federal.

FOR SALE BY

Geo. T. Reynolds & Son, Inc.,
Boring mill, No. 6 Defiance, horiz.
Grinder, No. 9 Diamond, disc.
Grinder, No. 2 B. & S., surface.
Lathe, 36"x35" Putnam, grd. hd., m.d.
Miller, No. 2 B. & S. pl., taper nose.
Millers, No. 3 B. & S. vertical, s. p.
d.; No. 4 Cincinnati, vert., s. p. d.
Wire drawer, 9 die Farrel Fdy. cont.

171 Pine Street, Providence, R. I.
Presses, No. 63; No. 65; No. 66 Bliss
Consolidated, s. s., geared.
Screw machines, No. 0; No. 0G;
No. 2 Brown & Sharpe automatic.
Shapers, 15" Potter & Johnston;
24" Stockbridge.
Swaging machines, No. 2; No. 3;
No. 3½; No. 4 Langlier.

FOR SALE BY

Brownell Machinery Co.,
Cam cutter, Pratt & Whitney.
Drill, 4' American, radial.
Grinder, No. 2 Morse universal.
Grinder, No. 9 Diamond disc.
Hack saw, 9"x9" Peerless, h. s.
Hammer, 125 lbs. Beaudry forging.
Lathe, 13"x4' South Bend.
Lathe, 27"x27" S. & B.
Miller, No. 4 Cincinnati vertical.

150 Pine St., Providence, R. I.
Planer, 17"x17"x4' Whitcomb.
Press, No. 701 Bliss flat edge trimmer.
Rolling mill, 12"x20" Standard.
Shaper, 15" Kelly.
Swaging machine, No. 4 Dayton
(Torrington).
Screw machines, No. 4 Brown &
Sharpe, wire feed.
Screw machine, No. 4 B. & S., g.f.h.

FOR SALE BY

The O'Brien Machinery Co.,

Angle flaring, Thomas, 8"x8" cap.
Bending rolls, 10' Bertsch, 4" cap.
Boring mill, 72" Bullard vert, 2 hds.
Boring mill, 78" Johnson horiz.
Column facer, 14" Espen-Lucas.
Drill, Minster heavy duty 24" cap.
Grinder, 10"x52" Landis, self contained, plain.
Hack saw, 6"x6" Racine & Peerless.
Hammer, 900 lb. Erie, steam forging.
Lathe, 38"-60"x32" McCabe 2 in 1.
Lathe, 42"x28" Fay & Scott b. dr.

113 N. Third St., Philadelphia, Pa.

Lysholm table, 50"x4' complete.
Miller, No. 3 Becker universal,
range 30"x10"x18".
Miller, No. 3 B. & S., pl., s. p. dr.
Pipe machines, 2, 4, 6, 8 and 12"
belt and motor drive.
Punch, beam, type 1G Clev., 24" bms.
Punch, No. 3 Southwark 4x4", mtr.
Shapers, 14, 16, 20 & 24" various makes.
Shear, No. 5 H. & J. s. e., 24" blades.
Slotted, 12" Dill, belt drive, all
power feeds.

USED AND REBUILT MACHINERY

FOR SALE BY

Herben Machinery Equipment Co., 28-30 S. Clinton St., Chicago, Ill.

Brake, 3', 16 ga. D. & K.
Drills, 4-sp. Sipp, 6-sp. H. & W.
Lift, 10' Economy, practically new.
Millers. Wisc. hand, vertical head;
No. 1 Kempsmith, No. 3 B. & S.

Shears, 30", 36", 62" footpower, 36",
16 ga., 18", gap, 36".
Screw machines, No. 52 Acme, 00
B. & S. auto., 1" Millholland hand.
Screw machine parts and collets.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, N. S.

Bulldozers, Nos. 3 and 9 W.-W.
Drill, 4 spindle No. 4 Colburn Mfg.
Drill, radial, 24" Mueller, s. p. d.
Drill, 6" Cincinnati-Bickford, radial.
Hammer, 100 lb. Beaudry upright.
Lathe, 48"x20' Betts-Bridge., m. d.
Press, No. 14 Bliss toggle, 50,000 lb.
Press, No. 58 Toledo, 145,000 lb.
Press, No. 39 Bliss horn., adj. table.
Press, No. 75½ Bliss, tie rod, 6" str.
Press, Perkins dbl. crk., 24" bet. up.

Pittsburgh, Pa.

Seamer, No. 3 Swaine, double.
Shaper, 16" Whipp, b. g., vee ram.
Shapers, 24" & 32" G. & E. 230 v. d. c
Shaper, 24" G. & H. Hi-duty, s.p.d.
Shear, throatless, 1", m. d.
Shear, 11" Canton squaring, 18 ga.
Shear, 8" Bertsch, 10 gauge.
Shear, Niagara 10"x10 ga., 12" gap.
Shear, alligator 3" sq. Canton, with
power roller table, motor drive.
Write us about your needs.

FOR SALE BY

F. A. Schack, Trustee-In-Bankruptcy

Fort Wayne National Bank,

Fort Wayne, Ind.

Boring mill, No. 2 Barrett, horizontal, 5" bar.....	\$ 225.
Crane, 20-ton J. & J., E. O. T., 40' span, 4 motor.....	850.
Drill, 6" Baush, radial, b. d.....	100.
Gear planer, 96" Gleason, spur and internal, m. d.....	550.
Hammer, 1500 lb. Morgan, single frame, steam or air.....	200.
Planer, 48"x48"x16' Niles, 2 heads.....	275.
Planer, 72"x72"x24' Niles, 4 heads.....	900.
Planer, 96"x48"x12' Pond, 4 heads.....	450.
Planer, 14" G. & W. boiler plate, full length clamp.....	100.
Punch, G. & W., 1-1/16" through 1" stock, 30" throat.....	90.
Shear, 12" G. & W., 30" throat.....	80.
Slotted, 12" Freeland, b. d.....	70.
Pratt & Whitney Plug & Ring Gauges, 1" to 3" incl.....	75.

FOR SALE BY

McDonald Machinery Co.,

Bolt mchs., Landis & Acme 1½".
Boring mill, Lucas No. 21 horizontal.
Brake, D. & K. 6' 10 ga., pwr. leaf.
Brake, Ohl 8' 10 ga. power press.
Drills, Cin-Bickford 3' & 3½" radials.
Drill, Sipp 4-sp., h. s., b. b. pwr. fd.
Gear hobber, G. & E. 24" & 60".
Grinders, B. & S. No. 2 surf. & univ.
Grinders, Person-Arter 16" rot. surf.
Ironworkers, Buffalo No. 0 univ.
Keyseaters, M. & M. No. 2.
Lathes, F. & M. 60"x26' bed; LeBlond
21"x18", q. c. g.; 50 others in stock.
Milling machines, B. & S. No. 5, vert.
Milling mches., B. & S. No. 10 Cinc.
No. 1½, Hendey No. 1-B, Kemp.

1535 N. Broadway, St. Louis, Mo

No. 3; Ohio No. 29; vertical slott.
atchk., all universal; Kemp, No. 1,
LeBlond No. 3-H.; Brown & S.
No. 3-B, s. p. d., Brown & Sharpe
No. 3, all plain, Cincinnati 12"
Mfg.; Cin. No. 2 s. p. d. hi-duty pl.
Punch press, d. c. grd., 79" between
uprights, 5" stroke, wt. 38,000 lbs.
Screw machines, Foster No. 5, gr. hd.
Shapers, G. & E. S. & M., Cin., Ohio,
American, Steptoe, Queen City,
12", 16", 18", 20", 24" and 30".
Square shears, Bertsch 10' 16-ga.
Turret lathes, W. & S. No. 2A univ.
Turret lathes, Libby 18" geared
head universal, Gisholt univ.

USED AND REBUILT MACHINERY

FOR SALE BY

W. J. Meschberger Elevator and Repair Co., Inc.
820 Forest Avenue Fort Wayne, Indiana

MOTORS

1-30 h. h., 450 r. p. m., 3 phase, 220 v., 60 cy., newly wound, with rails and starter	\$275.
1-75 h. p., 600 r. p. m., newly wound, 220 or 440 bare motor,	275.
1-15 h. p., 600 r. p. m., newly wound, 220 or 440	95.
5-1 h. p., 3-phase, 1200 r. p. m., 220 or 440 bare motors, each	30.

FOR SALE BY

The W. M. Pattison Supply Co., 777 Rockwell Ave., Cleveland 9.

Arbor press, No. 17 Greenard, 2016 new-

Chaser grinder, Geometric Tool Co., rebuilt.

Universal lever feed tables.

Lathe, 16" x 6' Hendey cone, tie bar hd., oil pan, C. F., taper attach., rebuilt

Lathe, 16" x 8' Hendey cone, tie bar head, c. r., taper attachment, rebuilt.

Miller, No. 5 Hendey duplex, Lincoln, oil pump, p. f. to table, 44" x 24" table

working surface, 90% new.

Our list of used tools gladly mailed upon request.

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No. 3B Milwaukee Univ. S. P.
No. 3 Cincinnati, Uni. Cone, (2).
No. 3 Cincinnati, Plain, M. D. (2).
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with cherrying attachment, motor drive**

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 $2\frac{1}{2}$ x24, 3x36⁸ Jones & L., chucking.

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16⁸ Springfield, m. d. thru gear box.
16⁸ Hollingsworth, cone.
20⁸, 24⁸ Cincinnati, cone.
20⁸ Kelly, cone.
20⁸, 25⁸ Smith & Mills, cone.

ENGINE LATHES—GEARED HEAD

14⁸x6¹ American, taper.
16⁸x6¹ Lodge & Shipley, taper.
18⁸x8¹ American.
20⁸x8¹ American.
20⁸x10¹ American.
22⁸x14¹ Lodge & Shipley, taper.
24⁸x14¹ Lodge & Shipley, taper.

ENGINE LATHES—CONE HEAD

14⁸x6¹ Lodge & Shipley.
15⁸x6¹ Greaves-Klusman.
16⁸x8¹ Lodge & Shipley.
16⁸x8¹ American, taper.
16⁸x32⁸x8¹ Putnam, gap.
18⁸x8¹ Boye & Ennes.

MILLING MACHINES

No. 4 Cincinnati Vertical, intermittent feed, late type.
No. 2, 3, 4 Cincinnati Vertical, s.p.d.
No. 3 Toledo Vertical, s. p. d.
No. 5 Cinti. Plain, rect. overarm, m.d.
No. 2, 3, 4, 5 Cincinnati PI, s. p. d.
No. 3B, 3B Heavy, 4B Heavy, 5B Heavy Brown & Sharpe Plain, m. d.

taper nose, late.
No. 2, 3, 4 Cincinnati Plain, cone.
No. 2 Kempsmith Maxi-Mill, m-i-b.
No. 3A Heavy, B. & S. Univ., m. d.
No. 1, 3 Kempsmith Universal, cone.
No. 2 A. Hendey Universal, s. p. d.
24⁸ Cinti. Auto. Duplex, m. d., late.
18⁸, 24⁸ Cinti. Auto. Duplex, belt.

GRINDERS

No. 2 B. & S. Univ., self-con., late.
36⁸x144⁸ Norton Roll, m. d., latest.
No. 60, 65 Head Cylinder.
No. 70 Head Internal, clutch head.
No. 33 Abrasive Vert. Surface, mtr-r-b.
6x32⁸, 10x36⁸, 12x72⁸ Norton, belt.
10x36⁸, 10x50⁸, 16x36⁸ Norton, m. d.

6x18⁸, 10x36⁸, 12x52⁸, 16x52⁸
Landis Plain Cylindrical, arr. m. d.
No. 2 Oesterlein Univ. Tool & Cutter.
No. 1 1/2 Cinti. Univ. Tool & Cutter.
No. 2, 3, 4 Brown & S. Univ., belt.
No. 4 Landis Universal, belt.

GEAR MACHINERY

No. 12 Barber-Colman, dbl. overarm.
No. 3, 12 Barber-Colman.
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No. 18H, 18HW Gould & Eberhardt.
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No. 6, 61, 612, 615 Fellows.
No. 7, 715 Fellows High Speed.
No. 3, 4, 13, 13H Brown & Sharpe.
6, 11, 18⁸ Gleason Bevel.
No. 36BM Gould & E. Roughers.

DRILLS

1, 4, 6 spindle Nos. 1/2, 1, 2, 3 Avey.
4 spindle No. 2 Avey, p. f.
2 spdl. Leland & G., ind. m. d., latest.
No. 26C Fox Multiple.

No. 30 Natco Multiple.
Upright Drills, all sizes and makes.
2 1/2⁸, 3⁸, 3 1/2⁸, 4⁸, 5⁸ 6⁸ Amer. Tri. Pur.
Plain Radials, gear box on base.

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Automatic, National-Acme.
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16' to 20' Extension Type Niles.
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16" Gould & Eberhardt Back Geared Shaper, S. P. D.

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Shears Power 8¹ 10 ga. Stoll 20⁸ Gap.
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- 1—No. 59 Toledo
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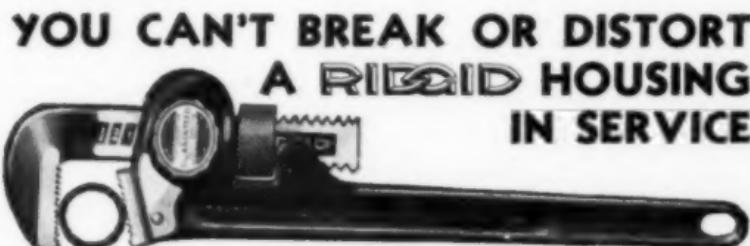
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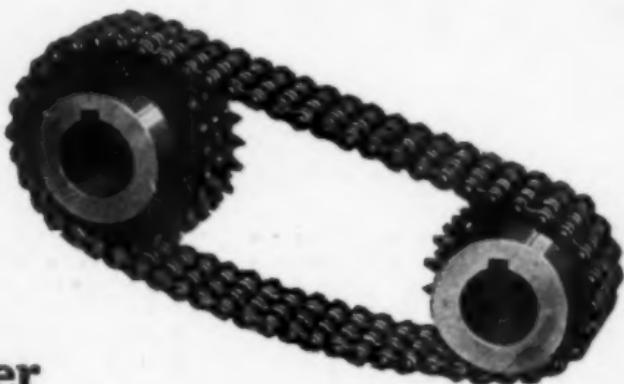
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